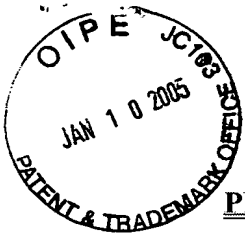


ANNOTATED COMPARISON

PROGRAM SEARCH SYSTEM, RECEIVING APPARATUS AND SEARCH APPARATUS FOR USE THEREOF, AND SEARCH METHOD THEREOF

BACKGROUND OF THE INVENTION

The present [0001] This invention relates to a search system for conducting search on information searches of program guide guides and/or program content, preferably for digital broadcasting, in particular on unique information of the program guide and/or program content for a BS digital broadcasting, upon basis of. Using a search request from a user, thereby providing the information searched to her/him, and in particular, the system provides the search results to the user. The invention also relates to a receiving apparatus and a search apparatus for use thereof, and further to a search method therefor. However, the information of program guide and/or program content herein. As used herein the program guide and/or program content means the program guide information (it is abbreviated by EPG, hereinafter, in a meaning of Electric Program Guide) and/or the information of typically the electronic program guide, or EPG), as well as information relating to data broadcasting (for example, character information and/or picture information) in the digital broadcasting, mainly or the internet.

A [0002] One method for providing the EPG in the CS (Communication Satellite) communication satellite digital broadcasting, which is now available, is to transmit the EPG through a channel CH for exclusive use thereof, together. Also, which may be exclusively used for that purpose. A method for providing the data broadcasting in the CS digital broadcasting is to use a data format for communication with provision of the data channel CH for exclusive use thereof, thereby using having a down-circuit link which is higher in speed faster than a telephone circuit.

SUMMARY OF THE INVENTION

Comparing to the CS digital broadcasting mentioned above, studies are made upon a BS digital broadcasting that will be started in 2000.

[0003] With the BS technology digital broadcasting, in addition to the service of broadcasting service of 7 channels (CHs) of the digital programs of high definition TV (i.e., digital HDTVs) TV programs, or 24 CHs channels of the digital programs of normal TV in place thereof, it is planned to provide, a data broadcasting service of supplying information

relating to the TV programs and independent data information which does not relate to the TV programs is envisioned. Those broadcasting services will be provided through the respective CHs for exclusive use thereof, channels which are occupied by a plural number of broadcasting or TV stations, and the with each TV station provides providing its own broadcasting service. For those broadcasting services, in particular about the broadcasting programs, the EPG is provided for the purpose of assistance of to assist the viewer in the selection of TV programs. This EPG can be divided into an EPG for all TV stations, which guides all the TV programs of the BS broadcastings, as a whole, and an EPG for each TV station, for introducing the its own programs by its own. The EPG for all TV stations is supplied through eight (8) carriers from the satellites; therefore, addressees (or subscribers) can obtain the EPG for all TV stations so as to know the available programs on the BS digital broadcasting, even if they do not receive any CH of them. However, for all of the channels. For the viewers, however, who receive the EPG for each TV station, they can know only the programs which are independently provided by the each of the broadcasting stations. The method for providing this EPG is completely different from that of the EPG for the CS satellite digital broadcasting programs, which is transmitted together through the CH for exclusive use thereof, collectively.

[0004] Further, with the data broadcasting service of the BS digital broadcast, a plural number of undertakers of the data broadcasting services at each station provide a large number of numerous services, such as shopping, etc., in the format of BML or XML. This is transmitted together with the mixture of a video packet and an audio packet, packets, being inserted into the data packet of a transmission format of the BS digital broadcasting, therefore only the data of the CH that is received can be taken or read in. According to, In the data satellite broadcasting of the CS digital broadcast, the data CH channel is provided for the exclusive use thereof exclusively, and a data format for communication is used therein, thereby providing a down-circuit which is higher in the speed comparing to that of the telephone circuit, and this is completely different from the present BS data broadcast, which provides a new service by means of picture information, etc., for exclusive use thereof, link faster than a telephone circuit. The present BS system data broadcasting looks to be appears similar to the data broadcasting broadcast which is inserted into the vertical retracing interval in the analogue broadcasting, however the. The data of the BS data broadcasting comes up to, however, is on the order of 1.5Mbps - 40 Mbps, i.e., the. This high speed data service of high speed and a large data amount, as is about 100 times large as the small size of the smaller amount of data,

30kbps - 40kbps, in the data broadcast of the analogue broadcasting. With the data screen, it is a service of using the BML or XML which can perform the high definition display, comparing to the HTML that is used in the Internet very often.

Namely, the [0005] The subscriber can receive the data broadcasting services to view them, which are supplied to that station, as well as, the EPG for all TV stations, and the EPG for each TV station of that station, other than the TV programs on the selected CH. The user, however, cannot obtain the EPGs for each TV station of the other TV stations, and the contents of the data broadcasting services thereof, unless the receiving CH channel is changed to. Also, the present service is a kind of the broadcasting, which serves a large amount. These services provide a large quantity of data from the satellite to a large number of homes in one direction cheaply, in a real-time manner, therefore almost. Almost of the services, however, are temporary temporal in the nature, i.e., they pass by and distinguish away are not continuously available. This is an aspect being different from the Internet, with which the service where information can be viewed by a viewer through the telephone circuit at a user at almost any time when she/he wishes.

Then, if [0006] If a large capacity memory apparatus of a large capacity is provided in the TV receiver, so as to scan all the CH channels received and memorize the contents of the EPG information of the EPG for all TV stations and from the data broadcasting service, it is would be possible to see all of the service contents. However, If, if however, scanning is made on the CHs of the receiver must be done on all channels continuously, for the purpose of storing the information transmitted from the satellites, it is impossible with conventional bandwidth limitations it would be difficult to view the TV programs. However, Furthermore, even if the information could be stored by scanning the all CH channels received during the receipt of the TV data, but only, just the data of from the data broadcasting comes up would amount to several thousands of pages, and then it takes a very. Thus a long time only would be required to see that data on the screen, therefore it is difficult. Also, by taking a fact into the consideration, that those contents are changed by a unit of one (1) day for. Daily changes in content of the broadcasting services, it is difficult to deal with this, and it is also difficult to find out the information that the viewer wish to see, among such the large amount of the stored data. Further, even if trying to dissolve all of those problems, the receiver comes to be an apparatus, which necessitates complicated operation and expensive one, as a household electric appliance

make it still more difficult. Furthermore, providing even a little of this capability would increase the cost and complexity of the receiver.

Then, a device and a business[0007] According to this invention, a system in a form of a search service center is effective, in which the provides viewers can be provided with a search service of search and an answer (report) thereto, responding to an inquiry (i.e., on, and a report in response to search requests. The report responds to inquiries (i.e., which channel and when it can be seen? etc.), which the viewer has about the information relating to the EPGs for the BS digital broadcasting and the contents of), as well as information from the data broadcasting services. In particular, the service. The information mentioned above flows is provided in real-time, unilaterally, as the broadcasting services, therefore many information are overlooked service operates. Accordingly, at the service business is also effective, of providing or supplying information and materials to the viewers responding to the inquiry, relating to the information which have been broadcasted once. In this manner, with their inquiries. By providing the search apparatus separately separately from the broadcasting stations and homes, it is sufficient for the home receivers, the household receiver to can have only the minimal functions which are necessary for it, therefore it is possible to achieve a receiver of easy operation and low price, as well as, for the subscriber to see the broadcasting services at any time when she/he wishes. minimal functionality, making operation easier and the receiver lower in cost.

As was mentioned in the above, according to the device and the business, in which[0008] Preferably, a database is constructed by receiving the EPG information of from the BS digital broadcasting broadcasts, and the content information of the data broadcastings broadcasts, for all of those CHs, and a channels. A keyword search database is constructed as well, a the same time can also be used, wherein the EPG service and/or the search service, etc., can be is provided to the viewer responding responsive to the request requests for the information, it is possible for. Thus the viewer to can selectively view only what she/he wishes among the large amount of the broadcasting services, easily, by means of the receiver which is cheap and operable with ease, as well as, to view the information which she/he overlooked, therefore the viewers can enjoy comfortable environment of information, fully. information broadcast.

BRIEF DESCRIPTION OF THE DRAWINGS

~~These~~[0009] ~~These~~ and other features, objects and advantages of the present invention will become morebe apparent from the following description, when taken in conjunction with the accompanying drawings, wherein:

~~Fig.~~[0010] ~~Figure 1 is a view for showing a device for~~block diagram illustrating a search service, according to the present invention;

~~Fig.~~[0011] ~~Figure 2 is a view for~~block diagram showing the structure of a search service center, according to the present invention;

[0012] ~~Figure 3 is a diagram of an example of a relationship between the search service center and an undertaker of the data broadcasting, according to the present invention;~~data broadcasters;

~~Fig.~~[0013] ~~Figure 4 is also a view for showing~~another diagram of an example of a relationship between the search service center and the undertaker of the data broadcasting, according to the present inventiondata broadcasters;

~~Fig. 3 is a view for showing an example of a relationship;~~

~~Fig.~~[0014] ~~Figure 5 is a view for~~diagram showing flows of information and fees relating to the search service center, according to the present invention;

~~Fig.~~[0015] ~~Figure 6 is also a view for~~another diagram showing flows of the information and fees relating to the search service center, according to the present invention;

~~Fig.~~[0016] ~~Figure 7 is a view for~~diagram showing other servicesservices provided by the search service center, according to the present invention;

~~Fig.~~[0017] ~~Figure 8 is a view for~~diagram showing flows of the information and fees infor the servicessystem shown in the ~~Fig.~~Figure 7;

~~Fig.~~[0018] ~~Figure 9 is a view for~~diagram showing other devicedevices for a search service, according to the present invention;

~~Fig.~~[0019] ~~Figure 10 is also a view for showing a relationship between the~~a diagram of a search service center and an undertaker of CATV, according to the present inventiona CATV distributor; and

~~Fig.~~[0020] ~~Figure 11 is also a view for~~a diagram showing further other devicedevices for providing a search service, according to the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Hereinafter, embodiments according to the present invention will be fully explained by referring to the attached drawings. ~~Fig. [0021]~~ Figure 1 shows an example of system as a device or mechanism for conducting a search service, according to the present invention, wherein an attention is paid on the EPG service and the data broadcasting service providing search services for an electronic program guide and for data broadcasting services, such as in the BS digital broadcasting system. An undertaker A provider 1 of the BS digital broadcasting sends out (or transmits) video and audio information of, such as for TV programs. Further, a plural number A plurality of the broadcast undertakers broadcasters 2 collect the data broadcast contents transmitted from plural and various kinds of suppliers (or providers) 3 of information and the data broadcast contents which is produced by the undertaker itself, etc., and broadcast them through the broadcast undertaker 1 and the suppliers 3. They then broadcast the content through a broadcasting company 1, for example, using a satellite 4. At the homes, this broadcast is received by means of a receiving terminal 5, such as, a PC (Personal Computer) a suitably equipped with a receiving function personal computer, a set-top box, or a TV apparatus building the receiving function therein, etc. Further, the The receiving terminal 5 comprises a function includes the capability of transmitting information in an upper direction through an up-link, for example, through a telephone circuit 6, for the purpose of dealing 6. This up-link enables the receiver to deal with the services of provided, such as, a join-in service in relation to the TV programs on the interactive TV, receipt of data broadcasting, and an independent shopping, etc., and with Also using this, also a search request upon information at the desire of a viewer is transmitted search requests can be sent by the viewer to the search service center 7. The search service center 7 sends out or transmits information on the broadcasting channels, etc., answering to the search request, through the telephone circuit 6 to the receiving terminal 5.

Fig. 2 explains [0022] Figure 2 illustrates a preferred embodiment for the device or mechanism of at the search service center 7 for providing the search service, according to the present invention. In the service center 7, the EPG information and the content data of from the data broadcastings on all the CHs of the respective broadcasting undertakers on all the channels are received and obtained, typically by means of an antenna 8 and a group of receivers 9, and they are 9. The combined information is accumulated or stored in a data file 10. At the same time, from the EPG information and the content data of the data broadcasting, keywords are

extracted by means of using a search engine ~~11~~11, and are stored in a database. ~~Since the~~ The content data of the data broadcasting ~~are~~will typically be in the expression of the tag format of BML or XML, enabling the keywords ~~can~~to be extracted in the same manner as ~~the~~ HTML ~~of~~over the Internet, ~~i.e., prompt or immediate selection can be obtained by means of the search engine 11.~~

[0023] ~~At home, when the viewer sends out (or transmits) the search request (for example, the keyword, etc.) for the information at her/his desire~~sought from the receiver terminal 5, ~~among the unique EPG information of the CHs not selected and the content data of the data broadcasting, the request is entered into this search center through the telephone circuit or the communication circuit, and then a list of the information relating to the keyword is searched and extracted by the search engine 11 within the center, from the information accumulated or stored in the data file, so that~~extracted. Then the content searched and extracted is ~~sent out (or transmit)~~transmitted to the receiving terminal 5 of that viewer through the telephone or communication circuit. ~~With doing~~Doing so, the viewer ~~can~~ obtains the desired information ~~of, such as, a fact on which, e.g. information from a data channel that the requested program is broadcasted at the present time, etc., with an aid of the information relating to the keyword, i.e., this~~to be broadcast at a specific time. This enables the viewer to receive and view the program on that data channel. Further, even if the information relating to the keyword ~~at her/his desire does not relate to the present one, but to the past one, it is possible to select or take out~~channel being received, that information from the database, so as to~~can~~ be delivered through the telephone circuit 6. Depending upon ~~an~~the amount and/or ~~contents~~content of the request, the data broadcasting channel can be delivered from a sender (or transmitter) 12 to the home through the broadcast station. ~~Further, by~~ By adding a search screen for the search service into the data broadcasting, if it is possible to show a search screen on a display means, such as, a display apparatus in the receiver apparatus, so as to enable the viewer ~~to broadcast, the viewer can~~ conduct search operations on that search screen, a simple device can be built up for sending out the request to the search center and receiving the search result therefrom, thereby improving convenience when she/he uses the present service, greatly enabling ease of communication with the search center.

~~Also, the explanation was given on the present search service for broadcasting, in which~~[0024]

In the preceding description, the general telephone circuit 6 is used~~was used for~~ communication to the search service. Of course, however ~~if~~, the Internet ~~is~~can be used as the

communication circuit, and a search database is provided for the information provider (supplier) on the Internet (i.e., Internet IP) within. Within the search service center 7, it is possible to build up a device, in which the search service can be performed without a barrier between the broadcasting and the Internet, so that the viewer can view them without the distinction between the broadcasting information and the Internet information together. In this case, link information off for the Internet is stored in the data file 10, together with a broadcasting archive, in which are arranged the EPG data for all stations, the EPG data for each station, the content data of data broadcasting and the search keyword, as well as, customer information, such as, ae.g. a the users search history of using the search by a search user.

[0025] With using such the present search service, it is not necessary to accumulate or store the large amount of data, while always scanning on the CHs channels by the receiver, and the. The viewer can see the desired information that she/he want, quickly on the receiving terminal, which is cheap in the price and can be operated easily. thereby simple to operate and low in cost.

However, there are cases where the transmission of [0026] Of course, the search request from the receiving terminal 5 can be done freely, and where it is possible but under a condition. The former means a case where the service to the user is free charge; therefore it is possible to execute the search request immediately, while the latter is the case where the service is provided to the user at charge, therefore the search cannot be executed if any of the cost is paid for. As anat no cost to the user. Alternatively, if there is a charge, the system can assure that the user has credit. For example of the latter, it can be considered to ask, the user can be asked to file a predetermined application before conducting the search. Namely, it is so constructed that, the user must input the information relating to the user her/himself, who is operating, being permitted to use the service. This application can be taken by the user entering the information on a predetermined screen, while and the search service center can start the search service to the user who is operating by receiving the said information. Here, as the information to be inputted in relation to the user, the followings can be listed up: an address, a name, an age, an occupation, a. Typical information would include name, address, age, occupation, telephone number, a mail mailing address, a card number of her/his credit card or an account number of a bank, a taste information in an answer credit card number, or a bank account number. It can also include preference information such as answers to an attitude survey and/or a questionnaire survey, an approval. Approval to the start of service for making, re-confirmation

if ~~she/he~~ the user wishes to receive the ~~present~~ service at the stated charge or not, or a consent to provide a viewer history of viewing, which will be mentioned later. Also, with the acceptance and the start mentioned above, they may be conducted. With acceptance, the service can be started through the telephone line and/or the communication line.

[0027] In addition to the basic service of ~~answering the location of the~~ locating information; for which the search request is made, ~~by selecting it from all of the received information,~~ the search service center 7 ~~provides a service of supplying the broadcasting~~ can provide the broadcast contents responding in response to the request. When the ~~supply of the broadcasting contents is chargeable, since it concerns with the copy rights of the broadcasting undertaker and/or the information supplier, in relation to the broadcasting contents, it is necessary to make a consent~~ contents charge, because of copyright issues, it may be necessary to make an agreement relating to the re-use of the broadcasting broadcast contents. If it is possible to make the consent agreement with the broadcasting undertaker and/or the information supplier, the ~~chargeable supply of the broadcasting contents comes to be effective. If it is impossible to reach to the consent agreement with the broadcasting undertaker and/or the information supplier, the device or mechanism shown in Fig. 3 may be possible to be applied to. In a case where the~~ agreement with the broadcaster and/or the information supplier, the chargeable supply of the broadcasting content can be greater. If consent is made with the undertaker provider A 1616, while not with the ~~undertakers~~ providers B 17 and C 19, the ~~undertakers~~ providers B 17 and C 19, with whom the consent cannot be obtained, are asked to prepare files of the ~~broadcasting~~ broadcast contents by themselves. And, ~~the present~~ The search service center 7 transfers the request for search material to the ~~undertakers~~ providers B and C, with using a transmitting device 15 for sending and receiving the information between the ~~undertakers~~ providers of the data ~~broadcastings~~ broadcast, and it receives the file of the contents, so as to send (or transmit) them to the viewer. Also, it may be possible to provide In addition, if desired, information about tendency of the viewers, based upon the basis of the search requests made by the viewers, from the search service center can be given to the undertakers, providers in a form a report.

Fig. 4 shows [0028] Figure 4 is a diagram showing a mode of the case where the consent cannot be obtained for the re-use of the broadcast contents in the search service center 7, ~~wherein~~ 7. In this mode the broadcast contents will not be stored in the data file 22 of the search service center 7, ~~therefore~~ 7. Therefore the search service center 7 offers only the ~~good offices~~

in relation to the supply of the broadcast contents 21, 18 and 20 by the broadcasting undertakers/providers A, B and C, respectively.

~~Fig. 5 shows a mode of business of~~**[0029]** ~~Figure 5 is a diagram showing another mode for the present search service center 7. Arrows of thin lines~~ Figure 5 is a diagram showing another mode for the present search service center 7. Thin arrows indicate the flows of the information and service/service, while ~~arrows of thick lines~~ arrows show the flow of the charges or fees. The search service center 7 provides a search report (or answer) of, such as, a location number ~~offor~~ for the Internet information, in addition to the EPG information and the location ~~timing and channel~~ timing and channel of the data broadcasts, responding to the search request from the receiving terminal 5. Further, when the request is made ~~on the past broadcasting for a broadcast~~ on the past broadcasting for a broadcast from the receiving terminal 5, the search service center 7 provides the content data. As a consideration for those services, the search service center 7 collects a search fee ~~and/or a cost for search material from the viewer~~. In this instance, the charge information may be determined so that the cost or fee depends upon the difficulty of the search, the content of the request and ~~anthe~~ the amount of information ~~ofin~~ in the report, ~~thereby to collect the charge~~. It is very important from a business view point to set a low price for a simple search, so as to activate the use of the present search service. Also, payment must be made for the copyrights to the broadcaster ~~sidebroadcasters~~, for example, the data broadcasting undertaker 2, etc., under the contract of re-use of the contents, ~~however since they are the information that was broadcasted already, the re-use thereof is beneficial to both the data broadcasting undertaker and the provider (or supplier) of the information, therefore, the contract in a form of charge free or the like can be made~~ provider 2 under the contract for re-use of the contents. Further, the search service center 7 can also prepare a customer trend information of, such as a, market ~~trendtrends~~ trends and a taste ~~trendpreference trends~~ preference trends, etc., upon basis of the search requests from the viewers, which ~~are analyzed therein~~. Accordingly, it can supply the data broadcasting undertakers/providers with ~~said the customer trend information, and thereby to obtain a fee for supplying the information or under the contract in relation to the supply of the information.~~ the customer trend information, and thereby to obtain a fee for supplying the information or under the contract in relation to the supply of the information. ~~With those information, Thus the charge information may be determined so that the cost is different depending upon the content or an amount of the information, thereby to collect the charge.~~ Further, it may be possible to collect the charge with using a card number of a credit card which is informed from the user. Of course, the charge can be collected using a credit card number or an account number of banking institution.

Also, Fig.~~[0030]~~ Figure 6 shows ~~at~~the flow of ~~the charge~~charges when the consent cannot be obtained on the re-use of the broadcasting data. Though the material cost paid by the viewer is delivered to the data broadcasting ~~undertaker~~provider, the search service center can receive a portion of the material cost as a mediation fee, ~~in the mediation service for an aid of the re-use of the broadcasting content data of the data broadcasting undertaker 2.~~Fig.

~~[0031]~~ Figure 7 shows ~~further other~~another mode of the ~~present~~ search service center 7. In this ~~Fig.~~Figure 7, a window 23 for service of advertisement and/or mediation is ~~newly~~provided in the ~~present~~ search service center 7. The window 23 for advertising and/or mediation service accepts a request for advertisement and/or an introduction of business, and registers them into the data file. The data file 10 introduces the ~~advise~~ments of the ~~various~~ undertakes ~~24~~advertisements and/or the business location or address and the business content thereof, relating to the search report information, when the search report information is supplied to the viewer.

Fig.~~[0032]~~ Figure 8 shows ~~is~~ a flow of ~~diagram~~diagram showing the charge in the ~~further other~~ mode of the ~~present~~flows for the search service center 7 shown in the Fig.~~Figure~~ 7. The search service center 7 can obtain the advertisement fee and the mediation fee from each of the various ~~undertakers~~providers 24, as a consideration for the services of advertisement and/or mediation thereof. The fees can be ~~determined~~set to be uniform or depending upon the contents of the services, ~~however it may be logical to be~~depend upon the content of the service, but preferably is a combination between a uniform fee for registration and the fees proportional to the number of the ~~introductions~~uses made.

~~[0033]~~ The supply of the data screen materials to the ~~viewers~~users, in relation to the advertisement and/or mediation, ~~must be~~is conducted ~~under the~~with consent of the data broadcast ~~undertakers~~providers 2 and/or the supplier of information. ~~On a while, when~~When it is not necessary to supply the data screen materials relating to the advertisement and/or the mediation, this consent is not necessary, ~~and then, Then~~ the search service center supplies the viewers with the location information of the data broadcasting and/or the location information of the related information thereof on the Internet, etc. ~~Also, if~~If the search service center produces a market report on the viewer's ~~tendency of taste~~tendencies from the access data made by the viewers, ~~so as to supply it to the broadcast undertakers and related ones at the charge, they can put it~~providers, it can be put to practical use, for example, ~~for~~in determining an increase in the number of popular programs, or re-broadcasting of the programs which are

~~broadcasted once and/or the number of re-broadcast thereof, by referring to the market report.~~
In the present system, it is possible to obtain whether to increase or decrease particular programs, or in deciding to re-broadcast programs. In this system, search fees from the viewers, the service fees relating to the advertisement and mediation from the various undertakers/providers, and subscriber fee of the market report from the broadcast undertakers and the related ones. Herein, an important point of this business fees for reports are potentially applicable. An important aspect is to increase up the accesses/access from the viewers;² therefore it is preferable to suppress/lower the search fees from the viewers to be a free charge or a low charge, to promote the use by the viewer, thereby activating the businesses in the services/services relating to the advertisement and mediation and the subscribing of the market report, etc/advertisements, mediation, and reporting features. However, [0034] Of course, the search service center 7 mentioned heretofore is explained, so that it can run/can operate as an independent business in/for the BS broadcasting system mentioned above. However, it should not be restricted only to this, and it can run/It can also operate as a part of an organization o/for the data broadcast undertaker/provider 2, as shown in Fig. Figure 9.

Then, heretofore, the [0035] The explanation was given on the case where above assumed the broadcast is received directly from the satellite in the present search service, however, explanation will be given on a case where the broadcast is/can be received and transmitted again in the present search service system, i.e., the/for example in a CATV system is used therein, hereinafter. In this case, the undertaker/provider of the CATV supplies the viewers with the program services of, such as, the programs of satellite broadcasting-received, the programs of broadcast by ground wave/local antennas, and the program services which are edited or produced independently by itself. In the case of the CATV, the EPG must be re-formed, but in the case of the data broadcasting, it can be supplied as it is, while the data broadcasting can be received by the receiving terminal at home, which has the same device or mechanism to that for use of the satellite one. The same problem will occurs in each home joining to the CATV, as in the receiving of the satellite broadcasting, therefore the therefore the present search service is still effective thereto. CATV, the EPG must be revised to suit that channel arrangement. Fig. [0036] Figure 10 shows as a diagram of the relationship between the search service center 7 and the CATV undertaker/provider 25. In the case of the CATV system, the search request from the receiving terminal 26 at home reaches to the CATV undertaker/provider 25

through a ~~bi-directional~~bidirectional cable 27. Accordingly, if the EPG information and the data broadcast information, ~~which is received by the present search service center 7, 7~~ are supplied to the CATV ~~undertaker~~provider 25, the CATV ~~undertaker~~provider 25 can meet ~~demand from~~provide them to the viewers. In this instance, the search service center 7 can obtain an income from the supply of the information to the CATV ~~undertaker~~provider 25. ~~In the case of the~~[0037] ~~For~~ CATV, there exists an original or unique information supply service, i.e., supplying the information closely ~~relating~~related to an area or region. If this original information is inserted into the data area of an original program, so as to be supplied, in the form of the screen image, which can be displayed by the BML and XML in the same manner of the satellite broadcasting, then a ~~new~~that business can be ~~started and~~ developed as a CATV station.

~~Fig.~~[0038] ~~Figure~~ 11 shows a search system unique to the CATV. In the service area of the CATV, a regional center 30 is disposed, which has a group of CATV receivers 28 and a search engine 29, and the search information unique to the CATV is ~~sent out (or~~ ~~transmit)~~transmitted to the search service center 7 through the telephone circuit 6, ~~therefore~~6. ~~Therefore~~ it is possible to supply ~~an~~ appropriate search information to the CATV ~~undertaker~~provider. If the content data of the CATV broadcasting is formed by using the content file of the CATV station, the CATV ~~undertaker~~provider and the present search service center can exist together, ~~and an~~. ~~An advantage is resulted~~results that there is no necessity of a large file in the regional center.

[0039] Since the CATV system is ~~dispersed or decentralized~~centralized in each area or region, the regional center is disposed for each of the areas of the CATV stations, ~~in relation to the original data thereof, so as to connect~~. This allows connections between the present search service center through a network, such as the Internet, thereby enabling the viewers to use the search for wide area information ~~and the regional one, without the distinction thereof, as well as regional information~~.

~~Heretofore, the explanation was given on the search service, mainly, however an application to those other than the search service is also important.~~

[0040] The present invention has applicability beyond the search service. ~~As was mentioned previously, the viewers can receive and obtain the EPG for all stations without necessity of the channel selection on the receiving terminal. Typically, however, they cannot receive and obtain the EPG for each station unless they select that channel on the receiving~~

terminal. Then, the EPG for all stations and the EPGs for each station, which are received and collected in the present search service center, are hierarchically combined in a form so that, Thus they can be seen collectively, to be supplied through a certain data broadcasting channel, then improving the convenience or and usability of the data for the viewer is improved greatly. The characteristic of this service lies in, not only that the EPG for all stations and then combined with the EPGs for each station are combined together, but also that a service guide for the data broadcast service of each station is supplied collectively at the same time.

If the service mentioned above is provided, together with the device or mechanism explained in the Fig. 2, i.e., the screen for the search service is inserted into the data broadcast, to be supplied to the viewers, while the viewers can send out (or transmit) requests to the search service center from the screen for search service, so as to obtain the search results therefrom, then the convenience or the usability can be improved much more, and the viewers can utilize the search service through the screen.

Explanation will be given on an application in relation to the [0041] As mentioned, this system can provide trend information of the about the viewers, which was explained in the Fig. 8. In the present application, a method for obtaining the trend information of the viewers will be shown in more details thereof. First, When the receiving terminals, each of which can collect a history of receiving and sending (or transmit) of information, are sold, in cooperation with a manufacturer of the receiving terminals, and then audience the histories of the viewers are collected from the receiving terminals, This can be done automatically with using the telephone network or the Internet network, under the subject to consent of the viewers. By combining the information of general audience rating assumed and the positive audience information obtained in the search service, it is possible to grasp a condition relating to a tendency or trend on interests of the viewers and a rate of depth thereof. The audience history and/or access information of the viewers are the information, which the broadcast undertakers and the service suppliers wish to have, therefore there can be established a business of supplying the information at charge. Further, the present information is an important one also better understand the users preferences. Further, the preference information is also important for the viewers, who cannot, enabling them to decide what to see among a mass of the information, therefore it is possible to provide a service a mass of the information about. Information services, such as "Top Ten", etc., which the popular ranking of audience is high and access are concentrated to, to the viewers at charge. On a while, if popular with audiences can be determined. If the audience information mentioned above is supplied as a program in the form of the data broadcast, a large number of viewers, being interested in the tendency or trend of audience and topics, may view the present information. Therefore, publishing the advertisement on this screen provided is effective, and the broadcasting business can be expected upon an income from the advertisement improved. In particular, with the data

broadcasting service of being sent out (or transmitted) repetitively, since it is possible to supply the program guides and the tendency preference of the audience for the present data broadcasting services, which are extending over all stations, in real time, then especially, the information of the audience ranking of the data broadcasting services on the air comes to be is more effective. Namely, the viewer can know, take in, and view the data broadcasting service on the topics, ~~from using~~ the audience ranking information without missing them, therefore there is a probability of a situation, where the service of supplying the information, such as the audience ranking, etc., is viewed at first. By combining the EPG service mentioned above, the search service mentioned above, and the viewer information service mentioned above, together, a new business ~~could~~ can be established for supplying the information about the data broadcastings.

However, in the embodiments mentioned above, the [0042] Although the foregoing explanation was given based on an assumption of the BS digital broadcasting, but the present invention should not be restricted only to this, and the The embodiments mentioned above also can be ~~also~~ applied to digital broadcastings, in general, such as the ground wave digital broadcasting and/or other satellite digital broadcastings, etc. broadcasting.

[0043] While we have shown and described several embodiments in accordance with our invention, it should be understood that the disclosed embodiments are susceptible of changes and modifications capable of being changed without departing from the scope of the invention. Therefore, we do not intend to be bound by the details shown and described herein but intend to cover all such changes and modifications falling within the ambit of The scope of the invention can be understood by the appended claims.